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CAPACITY DEVELOPMENT IN PLANNING, MONITORING, AND EVALUATION: RESULTS OF AN EVALUATION

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This paper describes the evaluation of a regional, multiple-site capacity-development project, undertaken to strengthen planning, monitoring, and evaluation in the field of agricultural research. It briefly discusses some of the challenges facing capacity development and its evaluation, the conceptual frameworks and methods adopted, and the procedures employed. It then presents some consolidated findings and lessons for the design, management, and evaluation of capacity-development efforts.

Background

Over the past 50 years, the practice of development cooperation in agricultural research has evolved significantly, as each new step became a learning experience based on the successes and failures of the preceding steps. Relatively short-term bursts of supply-driven institution building using direct resource provision and technology transfer have given way to organizational capacity building with a focus on longer-term, demand-driven collaboration. This involves aligning the organizational arrangements with organizational strategies, goals, and objectives. The aim of capacity development is to build self-reliant, learning organizations capable of successfully responding to challenges in order to maintain their relevance and performance levels under changing circumstances.

In 1996, ISNAR initiated a series of studies on the evaluation of capacity-development efforts. Their aim was to stimulate discourse on issues of capacity development and evaluation, and to develop methods for evaluating capacity-development efforts in agricultural research and development organizations. From 1997 to 1999, work focused on an in-depth evaluation of a complex regional project in Latin America and the Caribbean, known as ISNAR's Planning, Monitoring, and Evaluation (PM&E) project. The evaluation of that capacity-development project, and the lessons learned, are the subject of this paper.

The PM&E Project: An Overview

The project was implemented between 1992 and 1998 to strengthen PM&E in agricultural research organizations in Latin America and the Caribbean. Its aim was to help participating organizations develop integrated PM&E systems and thereby enhance their research management. The hypothesis driving the project was that improved management would contribute to the relevance, effectiveness, and efficiency of agricultural research

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programs, as well as contribute to the production of new information and technology that could be utilized in the productive sector.

Initially, the project focused on training in PM&E within the broader framework of strategic management. As it evolved, the training effort broadened to include three additional areas considered to be high priority by the region's managers: management information systems, project formulation, and management of organizational change processes.

The PM&E project adopted three strategies:

Information. Reference books and training materials were prepared for use in workshops and for distribution to managers and libraries throughout the region.

Workshops and training. The project team organized regional workshops to plan and review the project's activities and to disseminate its results to high-level managers in the region. A group of trainers was established, with members drawn from the participating regional research organizations, to design and conduct the project training events in the region.

Facilitation of organizational change. In 1996, at the request of agricultural research leaders in the region, the PM&E project expanded and began providing direct support to selected organizations that were committed to making organizational change processes and to undertaking the necessary efforts to improve their PM&E systems. These "pilot-case organizations" were located in Costa Rica, Cuba, Panama, and Venezuela.

The project was guided by three basic principles:

Participation. Active involvement of the project's intended beneficiaries was encouraged to ensure the relevance of its activities, commitment to its objectives, and the subsequent application of its results. Teams of managers in the region participated in project-planning workshops and developed, tested, and revised a set of training materials. Later, during the evaluation stage, these same managers were to become involved in reviewing the project.

Learning by doing. To foster organizational strengthening, ISNAR staff members and participating organizations jointly planned activities, tested innovations, and reviewed results, which they later used to modify their plans during the project-implementation phase.

Respect for diversity. The project built upon the diversity of knowledge and experience present in the region and elsewhere, and worked with local managers to develop adapted solutions to specific local management problems rather than attempt a one-size-fits-all solution.

Evaluation of the PM&E Project

The study began with the premise that evaluations should be judged by their usefulness to the stakeholders in whose interest they are carried out. To be useful, evaluations must be consciously targeted at intended users. Their design and the data collected must be understood and found credible by the intended users. To achieve this, evaluators and representatives of all the key stakeholders met in workshops to make joint decisions on the conceptualization, design, and methods to be used in the evaluation.

The first participatory workshop, held in Ecuador in early 1997, helped define the four questions that the evaluation would eventually answer:

1. What have been the PM&E project's main contributions to agricultural research management?

2. How have the project's contributions been achieved?

3. What lessons can be learned to improve the design of future capacity-development programs?

4. What lessons can be learned to improve the evaluations of future capacity-development programs ?

Three additional workshops in 1997 and 1998 allowed participants to review data, results, and findings, and to share draft reports and feedback.

Conceptual frameworks

Participants in the initial planning workshop used three frameworks to design the evaluation and answer its four questions.

First they adapted an *organizational assessment framework* (Lusthaus et al. 1995) which portrays an organization by looking at the following four "dimensions": its operational environment, its motivation, its capacity, and its performance.

The *operational environment* refers to the legal, social, and economic context in which the organization operates.

Organizational motivation pertains to the internal factors that influence the direction in which the organization is headed and the energy displayed in its activities. These, in turn, are influenced by such variables as organizational culture and incentives.

Organizational capacity refers to the capabilities of the staff complement, other resources possessed by the organization, and its structure, management systems, and linkages with other organizations.

Organizational performance is gauged in terms of effectiveness, efficiency, and sustainability. Effectiveness refers to the degree to which the organization achieves its goals. Efficiency is the degree to which unit costs are minimized. Sustainability is the extent to which the organization maintains its relevance to its stakeholders and thereby secures the financial and other resources it needs.

This framework posits that an organization's performance is a function of its operational environment, its motivation, and its capacity.

Since work under the PM&E project involved agricultural research managers and organizations, the framework was applied at two levels of analysis: the individual participant level and the organizational level. The PM&E project was viewed as one element in the operational environment of the participating individuals as well as of their organizations. The project could have *direct* effects on various environmental factors and on various aspects of individual or organizational motivation and capacity. Through its effects on environmental, motivational, or capacity variables, the project could *indirectly* contribute to the performance of individuals and/or organizations.

The second framework was a *logic model* for the PM&E project (figure 1). This model is a simulation on paper of the program's operations: it makes explicit the means by which the actions and components of the capacity- development effort are assumed to produce desired improvements in participating organizations.

The PM&E project sought to increase an organization's capacity by (1) producing and disseminating PM&E information, (2) training agricultural research managers, and (3) facilitating change processes in selected organizations. The logic model posits that managers use the information and training provided to improve the way their organizations plan, monitor, and evaluate their research activities. This type of improvement is thought to lead to more relevant, effective, and efficient research programs.

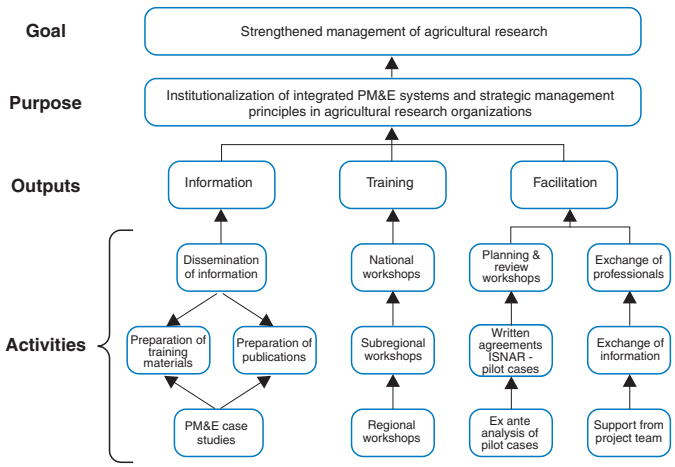

Figure 1. Logic model of the PM&E project

The third framework used by the workshop participants is an *integrated evaluation schema* that relates each of the three project components to four potential areas of impact, at the level of individuals as well as organizations (figure 2). It provides a concise visual representation of a set of complex relationships that are otherwise elusive.

Five complementary studies

The evaluation team determined that no single evaluation study could provide adequate answers to all four of the evaluation questions. It therefore designed five complementary studies to assess the impact of the three project components (information, training, and facilitation) on the environment, motivation, capacity, and performance of the participating individuals and organizations. This set of complementary studies comprised

- a documented review of the project's design, strategies, activities, and outputs;
- a study of the impacts of the project's publications on individuals and organizations;
- a study of the impacts of the project's training methods;
- an assessment of the project's contributions to facilitating change at three pilot-case organizations;
- an assessment of the project's contributions to facilitating changes in PM&E at nine other organizations throughout the region.

Table 1 represents the five studies in an evaluation matrix, which summarizes their objectives, methods, and data sources. A description of the studies follows.

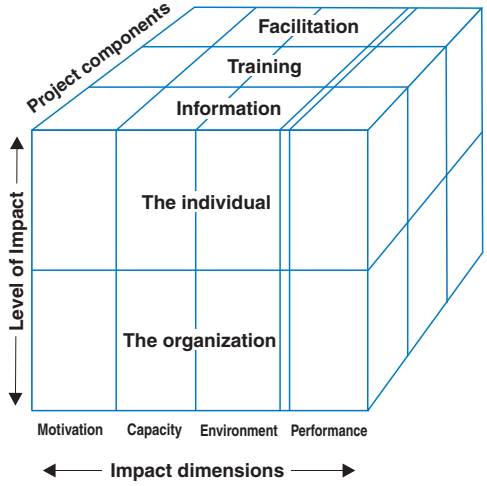

Figure 2. Integrated evaluation framework

Note: The three project components are assumed to contribute mainly to aspects of individual and organizational motivation and capacity, and of the environment.
The double line between *environment* and *performance* reflects the fact that performance is a function of motivation, capacity, and environmental variables. Hence, the project's contributions to performance are indirect.

Table 1. The Objectives, Methods Employed, and Data Sources for the Five Evaluation Studies

Study	Objectives	Methods	Sources of data study
Study 1: The ISNAR PM&E capacity development project	Review the project's objectives, strategies, activities, and outputs	Self-assessment	Project records
Study 2: Impacts of information	Analyze the dissemination, use, and impact of publications	Mail survey	144 recipients of project publications from 40 organizations in 24 countries
Study 3: Impacts of training	Analyze impacts of training	Mail survey	67 training participants from 43 organizations in 24 countries
Study 4: Changes in PM&E in the pilot cases	Analyze changes in PM&E in the pilot-case organizations; identify contributions of the PM&E project; determine effects of the changes on organizational performance	Self-assessment	Collaborators in three pilot-case organizations
Study 5: Dynamics of PM&E in Latin America and the Caribbean	Analyze changes in PM&E in the region; identify contributions of the PM&E project; determine effects of the changes on organizational performance	Case studies	Informants, documents and observations in nine organizations in eight countries

Study 1. The PM&E project

This study, authored by the PM&E project team and the evaluation team, provides a descriptive review of the project since its inception. It presents background information on the institutional setting of the project and outlines its objectives, strategies, activities, and products. The sources and uses of all project resources are also documented.

Study 2. Impacts of information

Study 2 assessed the use of the project's publications and their effects on individuals and their organizations. A mail survey was used to collect information from the 500 individuals known to have received project publications prior to July 1997. A 29% return rate was obtained. Respondents provided information on the use of the project publications and evaluated their general usefulness compared to other publications on the same topics. They also assessed the impact of the project publications, against a set of indicators measuring the degree to which the information had influenced the motivation, capacity, operational environment, and performance of both individuals and organizations.

In order to enhance the quality of data, respondents in both this and the following impact study were asked to provide concrete examples. These were used to verify impact claims and to illustrate how information, and training, had contributed to capacity development.

Study 3. Impacts of training

The third study evaluated the impact of the project's training activities on the behavior of both the participants and their organizations. All 150 professionals in the region who had participated in training events received a survey questionnaire. The return rate was 45%. A set of indicators relating to anticipated areas of change helped the respondents gauge the degree to which project training had affected the motivation, capacity, operational environment, and performance of both the organizations and the professionals themselves.

As a means to corroborate the information received, each respondent's immediate superior and workplace colleagues were also asked to provide their assessment of how the training had affected the trainees and their organizations.

Study 4. Changes in PM&E in the pilot-case organizations

The project's facilitation component was evaluated via a series of self-assessment exercises: in each of the pilot-case organizations, change teams organized and facilitated workshops in which management and staff analyzed the changes that had taken place in their organization. They also identified the strengths and weaknesses of the change processes and assessed the PM&E project's contributions to the changes that had taken place. The assessment procedures and instruments were developed jointly by the evaluation team and collaborators in the pilot-case organizations. The latter then organized the self-assessment exercises and prepared reports.

A facilitated self-assessment process was used in order to capitalize on the unique knowledge that pilot-case participants possessed of their respective organizations and of how these organizations had changed. In addition to increasing the depth and quality of information, self-evaluation can also have a positive effect on an organization's willingness to engage in meaningful review.

Study 5. Dynamics of PM&E

The fifth complementary study sought to evaluate the PM&E project's contributions to change in PM&E systems and to identify the effects of enhanced PM&E on organizational performance. It did so by analyzing the results of nine case studies performed to document

changes in PM&E systems in the region's agricultural research organizations since 1992 and comparing these with the results of 13 case studies carried out in 1992.

A case-study protocol and its instruments were developed after Yin (1994). The protocol specified the precise procedures to be employed during data collection and fieldwork. The evaluators collected interview data from the managers and staff of each organization and from key external informants familiar with the organization, and they reviewed each organization's documents on PM&E. During five to 14-day long in-country visits, members of the evaluation team observed PM&E facilities and practices and, jointly with one or several members of the participating organization, collected available data. They first prepared separate case-study reports and later produced a synthesis report, which incorporated the results of all 11 cases.

Enhancing the reliability of the results

In addition to applying the techniques, described above, to maximize the degree of reliability of the collected data, the evaluators carried out telephone conversations, field visits, and correspondence in order to obtain corroboration of the impacts reported by workshop participants and to check the validity of claims. They also sent out a simple questionnaire to top-level agricultural research managers and to representatives of regional organizations familiar with the ISNAR project, requesting them to indicate what types of project impacts, if any, they had observed. The responses received from the 51 respondents were coded, analyzed, and used to corroborate the data gathered from the five studies.

Consolidated results

The conceptual frameworks helped identify the effects of the project at both the individual and organizational levels. Results at these two levels will be dealt with separately. It is important to acknowledge that the PM&E project has not *caused* the reported changes but it has *contributed* to them.

Contributions of the PM&E project to agricultural research management at the individual level

The evaluation studies indicate that the project helped increase the competence of many of those involved in planning, monitoring, and evaluating agricultural research. Individuals felt that the project's publications provided useful information and that its training activities had given them numerous opportunities to share information and experiences and to experiment with new management techniques.

The most significant contribution at the individual level is noticeable in the realm of *motivation*. Managers have gained an appreciation of the need for change and of the role PM&E can play in the change process to ensure that decisions are based on systematically collected data. The understanding has emerged that an integrated PM&E system is an essential element when it comes to monitoring external trends, identifying needs and opportunities, defining relevant goals, developing appropriate strategies, coordinating staff member activities with organizational strategic objectives, and ensuring the continuous improvement of various strategies, activities, and outputs.

The findings of all of the evaluation studies show how the project's publications and training efforts have contributed to the development of the individuals' *capacity*, by improving their knowledge and skills in PM&E, strategic management, and the management of organizational change. The documented experiences also indicate that the enhanced technical capacity for PM&E is of little value without the ability to manage organizational change.

Most of the improvements in PM&E have been instituted at the level of research activities and projects that are managed directly by individuals who have participated in the project activities.

The project has further helped develop the ability of individuals to provide management training to other professionals in both their own and in other organizations. Many organizations have been tapping this strengthened regional management-training capacity to upgrade their management practices.

Contributions of the PM&E project to agricultural research management at the organizational level

Most of the changes reported at the organizational level occurred where the following conditions prevailed:

- The *environment* was conducive to change (e.g., strong external pressures for change).
- Top managers provided *leadership* that encouraged change.
- A *critical mass* of staff members was involved in and committed to the change process.
- Appropriate *institutional innovations* were made available or developed.
- *Resources* were provided for change (e.g., time dedicated by key staff members and budgets for training and facilitation).
- The *change process* was well managed.

Wherever the organization itself took the lead, fundamental changes came about. The ISNAR project played a catalytic supporting role by motivating key managers and by providing concepts, information, training, and tools. It also stimulated participating organizations to dedicate essential resources to the change process. In both pilot-case and other organizations, most of the organizational improvements occurred in the area of strategic planning. Indeed, within the various research centers and projects, improvements were instituted in

the operational planning processes. Some improvements were made in the monitoring process, and some, but fewer, at the evaluation level, which continues to be the weakest phase of the management cycle.

The PM&E project has contributed more to management at the project level than at higher decision-making levels. This reflects the fact that middle managers are themselves able to introduce improvements at the project level more readily than at higher levels, where leadership and coordination must be provided by top management.

Actions to strengthen and integrate PM&E systems have been most vigorous at the level of the pilot cases. Other organizations have improved some aspects of their PM&E systems, but not with the same degree of integration.

The project's role in enhancing capacity

Project reach and intensity. The project employed three prime strategies, each of which presented a different combination of reach and intensity. The *information strategy* had the largest reach and the lowest intensity of interaction; the *training strategy*'s reach as well as intensity were "intermediate," while the *pilot-case strategy* had the smallest reach and the highest intensity of interaction. Evaluation results indicate that a high intensity of interaction favors capacity development at both the individual and organizational levels.

Use of information. The project's publications had been widely distributed among all participants, who attributed the highest value to the training manuals on strategic planning. Noticeably, the most significant changes occurred where individuals had actively searched for ways to improve their organizations and found information in project publications which they could immediately apply.

Results of training. The PM&E project provided direct training to some 150 managers. Evaluation results lead to the concluson that, while training can play an important role within a comprehensive strategy for capacity development, training alone—without active support within the organizational environment—is not enough to produce organizational change.

Changes in the pilot-case institutions. In the pilot-case institutions, capacity development showed the best results where there was a strong top-level commitment to change, and where managers interacted intensely with the project team. Reported impacts on most of the indicators of organizational motivation, capacity, environment, and performance were significantly higher in pilot cases than in other organizations.

Results of the project's teamwork approach. The project used highly participatory approaches to conduct all of its capacity-development work. Groups of individuals planned the project's activities, studied PM&E in their own or other organizations, prepared the publications, played key roles in the regional workshops and training events, facilitated change processes in the pilot cases, and participated in numerous reviews of project-related work. Over time a strong team spirit developed among the participants.

Limitations of the project's strategies

The evaluation studies identified a number of limitations of the project's strategies.

The somewhat generic nature of the project's training. Participants reported that training would have been even more useful if it had been tailored more specifically to the needs of individual organizations as opposed to those of the region as a whole.

Limited interaction time. Most managers were in contact with the project during short-term training activities. Significant capacity development at the organizational level requires more extensive interaction and direct support.

The short (three-year) duration of work in the pilot-case institutions. Experience indicates that strategic planning and institutionalization of integrated PM&E systems requires a minimum of five years.

The restricted access of pilot-case organizations to external expertise. A single professional served as the external facilitator for each pilot case. Pilot-case participants believe that access to a broader array of skills and experiences will result in capacity development that leads to organizational change.

The seemingly indiscriminate distribution of project activities and resources (during phase 1 in particular). An exclusive focus on organizations committed to making management changes could have led to greater impacts at the organizational level.

Lessons for designing and managing capacity-development efforts

Collaborating with the project team, and with Latin American agricultural research managers, donors, and a consultation committee of experts, the evaluation team analyzed the information related to the evaluation of the performance of the project's strategies and results. The following general lessons were drawn to improve the design and management of future capacity-development efforts:

Intended beneficiaries should play a central role in designing and managing capacity-development efforts. It is both valuable and feasible for ISNAR to involve intended beneficiaries in all phases of the program design, implementation, and evaluation. Involvement enhances local ownership and contributes to the use of evaluation results and the sustainability of capacity-development efforts.

Capacity-development efforts should articulate and test their underlying theories and assumptions. Capacity development is still more of a process of social experimentation than of organizational engineering. Interventions are goal directed. The goals, and the activities designed to achieve them, should be made explicit at the outset. Changes to either goals or activities, and the reasons for the changes, should be recorded. Expertise in capacity development will develop only if efforts are treated as applied research from which lessons must be learned.

Capacity-development efforts should focus their attention on organizations that are committed to change. Top-level commitment and leadership are essential for large-scale organizational change. Investments in uncommitted organizations are wasted.

Capacity-development efforts need to go beyond providing inputs—they need to facilitate change processes. The key to capacity development lies not with the provision of resources but with the appropriate deployment of existing and new inputs to solve problems by improving organizational procedures and work routines.

Capacity-development efforts need to work simultaneously on many fronts. The evaluation results highlight the need to work simultaneously on both technical and political/cultural factors at different organizational levels, ranging from top management, which must facilitate change, to operational teams and staff, who depend on support to implement new management systems.

Capacity-development efforts should adapt themselves to the needs and circumstances of the organizations they support, not visa versa. The objectives and schedules of external agencies are often assumed to be synonymous with those of the organizations that are in search of improvement. However, the pace and direction of organizational changes are influenced by a multitude of factors, many of which may overshadow an externally funded project. External capacity-development interventions may support change processes, but they cannot effectively drive them.

Integrating PM&E is crucial for the promotion of individual and organizational learning and improvement strategies. Planning, monitoring, and evaluation are not discrete management and control functions in organizations. The experience of the PM&E project confirms the value of systematic and integrated planning, monitoring, and evaluation in the development process of individual and organizational capacities and performance.

There are no blueprints for capacity development. Each organization must learn from its own experiences as well as from that of others. Strengthening PM&E is critically important to foster learning and improve efforts over time.

Lessons for the evaluation of capacity-development efforts

The following general lessons may help improve the evaluation of capacity-development efforts:

An evaluation of a capacity-development effort must draw on three types of theory: theory of the intervention, theory of performance, and theory of change. A great deal is known about organizational development, performance, and change, and evaluations should be informed by knowledge and prevailing theories. In cases where capacity-building efforts lack a theory of action, evaluators must help staff members spell out the assumptions underlying their activities and build a logic model that relates their efforts to expected achievements and allows unexpected outcomes to be identified and explained.

Since the evaluation of capacity-development efforts is a relatively new field of study, considerable work is still needed to clarify the key concepts and terminology. Clear concepts and a well-defined vocabulary, adequately grounded in current theory and practice, are essential to the advancement of a relatively young and essentially transdisciplinary field like capacity-development evaluation. At present, confusion is rife as donors, beneficiaries, and change agencies use similar terms in different ways.

In the evaluation of capacity development, the impact metaphor should be avoided. The militaristic impact metaphor fails to capture the essential features of capacity development, which is a process of change and growth. In the evaluation of capacity-development efforts, the term *contribution analysis* (Mayne 2001) may be more politically and technically appropriate than *impact assessment*. How we choose to think about development cooperation influences how we conduct and evaluate it. Traditional impact-assessment models are often inappropriate.

The participation of organizational members and stakeholders is essential in the evaluation of a capacity-development program. Members and stakeholders possess understandings of complex organizational realities, and their involvement in the evaluation has been discovered to improve the study design and enrich the interpretation of the findings. When stakeholders are full participants in an evaluation, they more readily build up their evaluation capacities and use evaluation findings.

When evaluating organizational capacity development, triangulation is especially important in enhancing the trustworthiness of results. The use of different evaluators to collect and analyze different types of data from several different sources permits results to be corroborated in a disciplined and systematic way. No single source is sufficient to capture the complexity of capacity-development efforts. To the extent possible triangulation should be built into each and every evaluation study. This means that evaluations must employ mixed methods.

Capacity development should be evaluated in ways that contribute to the capacity-development process. Given the fragility of capacity-development processes, it is important that evaluations be designed not only to provide evaluative information for external stakeholders, but also to support and strengthen the capacity-development effort itself. An evaluation can support capacity

development, by fostering disciplined analytical thinking and learning, and by instilling the motivation to improve one's understanding of the entire capacity-building process.

About this Study and the Authors

This paper is based on work carried out by the authors and their numerous collaborators, within ISNAR as well as in research and development organizations in Latin America and the Caribbean region. The authors would like to express their indebtedness to many colleagues who have provided innumerable insights into capacity development and its evaluation.

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